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KRAMER LEVIN NAFTALIS & FRANKEL LLP
INTELLECTUAL PROPERTY DEPARTMENT
1177 AVENUE OF THE AMERICAS
NEW YORK, NY 10036

EXAMINER	
RINES, ROBERT D	

ART UNIT	PAPER NUMBER
3626	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

klpatent@kramerlevin.com

Office Action Summary	Application No.	Applicant(s)	
	09/996,065	ZIZZAMIA ET AL.	
	Examiner	Art Unit	
	Robert D. Rines	3626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Notice to Applicant

[1] This communication is in response to the amendment/Request for Continued Examination (RCE) filed 19 October 2007. Claims 1, 2, 6, 8, and 17 have been amended. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[2] Claims 6-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summerell et al. (United States Patent #5,937,387) in view of Tanaka (United States Patent Application Publication #2002/0133441).

As per (currently amended) claim 1, Summerell et al. disclose a system for calculating a composite score/contribution of variables in a scoring formula comprising a multivariate expression, comprising: a database for storing values associated with a set of variables (Summerell et al.; col. 3, lines 19-41 and col. 8, lines 8-29); at least one processor for: calculating a partial derivative of the scoring formula with respect to the composite score (Summerell et al.; col. 8, lines 18-29 and col. 15, lines 35-55 and col. 16, lines 4-35); and calculating a deviance value for the scoring formula with respect to the composite score (Summerell et al.; col. 9, lines 62-67, col. 10, lines 1-16, and col. 16, lines 16-35); calculating the composite score based on the calculated partial derivative and deviance values derived from the scoring formula with respect to the composite score (Summerell et al.; col. 16, lines 16-35 and Table 2 *see "physiological age").

While Summerell et al. disclose a multivariate scoring formula and associated calculations directed to determining a "physiological age" (i.e., a "score"), Examiner agrees with Applicant's remarks filed 19 October 2007 that the "physiological age" calculated by Summerell et al. is a composite score that employs variables of predetermined weights (i.e., "contribution"). Accordingly, Summerell et al. fail to disclose determination of the contribution of individual variables. Similarly, while Summerell et al. disclose the use of the equation in determining the composite score, Summerell et al. fail to disclose the generation of the multivariate expression.

However, Tanaka discloses a method and system for statistically analyzing financial databases to identify causes responsible for systematic variances. Specifically, Tanaka discloses a process of

generating a multivariate statistical model from the values in the database and a scoring formula based thereon (Tanaka et al.; paragraphs [0016] [0051]). Tanaka further discloses employing the resultant multivariate expression to determine the "relative contributions" of each of the individual data elements (i.e., individual variables) (Tanaka; paragraphs [0009] [0068]-[0070]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the multivariate model development strategy disclosed by Tanaka to generate the multivariate expression employed by Summerell et al. The motivation to combine the teachings would have been to identify, quantify, and rank the data element's contribution with respect to the of the process goals (Tanaka; paragraph [0009]) of supplying new statistics for calculating health and life insurance premiums (Summerell et al.; col. 5, lines 3-15).

As per (currently amended) claim 2, Summerell et al. teaches a system wherein the processor comprises a software module that takes the first derivative of the scoring formula (Summerell et al.; col. 8, lines 18-29 and col. 15, lines 35-55 and col. 16, lines 4-35).

As per claim 5, Tanaka discloses a system further comprising means for ranking the individual variables based on the calculated contribution (Tanaka; paragraphs [0009] [0016]).

As per (currently amended) claim 6, Summerell et al. teaches a system wherein the processor includes a software module that receives inputs for a mean value and a standard deviation value and the deviance value is calculated (Summerell et al.; col. 8, lines 9-29 and col. 10, lines 1-39).

While Summerell et al. teaches a system/method enabled by software applications (Summerell et al.; col. 8, lines 19-24) and Summerell further teaches applying a combination of mean values and deviation values for the purpose of determining composite score as a function of a number of risk factors influencing the health risk associated with an individual (Summerell et al.; col. 10, lines 1-40 and col. 16, lines 4-35), Summerell et al. fails to explicitly state using the formula: 6 Deviance of x i = (x i - i) i where .mu..sub.1 is the mean for x.sub.1 and .sigma..sub.1 is the standard deviation for predictive variable x.sub.1.

However, because Summerell et al. applies the same variables and factors to calculations determining the overall risk associated with an individual as those set forth by the Applicant in the present application, Examiner interprets the above noted teachings of Summerell et al. to be functionally analogous to Applicant's use of a mean value and deviation values (and slope determined as a function of a variable) in determining the relative contribution of a number of risk factors to the overall risk associated with an individual. Accordingly, it would have been obvious to one of ordinary skill in the art to have applied the mean value and deviation values to an equation determining the relative health risk associated with an individual. The motivation to perform the calculations would have been to factor average survival probability data, including recalibrating relative risks using the mean of a population and associated deviations, into determining a user's physiological age as a measure of the overall wellness of an individual (Summerell et al.; col. 10, lines 1-40 and col. 11, lines 13-39). Further motivation would have

been to provide a system and method that supplies new statistics for calculating health and life insurance premiums (Summerell et al.; col. 5, lines 3-5).

Summerell et al. determine a composite score derived from predetermined weighting of the contributory variables. Summerell et al. fail to disclose determining of the contribution (i.e., weighting) of the individual variables.

However, Tanaka discloses employing the resultant multivariate expression to determine the "relative contributions" of each of the individual data elements (i.e., individual variables) (Tanaka; paragraphs [0009] [0016] [0068]-[0070]).

As per claim 7, Summerell et al. disclose a system wherein the contribution is calculated for any of the plurality of variables by multiplying the slope and deviance values (Summerell et al.; col. 16, lines 13-35 *see analysis claim 6).

Regarding claims 2 and 5-7, the obviousness and motivation to combine as discussed with regard to claim 1 above are applicable to claims 2 and 5-7 and are herein incorporated by reference.

As per (currently amended) claim 8, Summerell et al. teaches a method of evaluating the contribution of each of the plurality of predictive variables to score comprising: populating a database associated with the system with a mean value and standard deviation value for each of the plurality of predictive variables (Summerell et al.; col. 3, lines 19-41, col. 8, lines 8-19, col. 10, lines 1-16, col. 16, lines 16-35); calculating a deviance value based on the mean value and the standard deviation value for the scoring formula with respect to the composite score (Summerell et al.; col. 10, lines 1-39), and multiplying the deviance value and slope value, as determined with respect to the composite score, to determine the composite score (Summerell et al.; col. 16, lines 13-35 *see analysis claim 6).

Summerell et al. determine a composite score derived from predetermined weighting of the contributory variables. Summerell et al. fail to disclose determining of the contribution (i.e., weighting) of the individual variables.

Applicant has amended claim 8 to require the additional steps of evaluating a score generated by a multivariate statistical model; generating a multivariate statistical model from a set of values associated with a set of variables; and generating a scoring formula based thereon. As noted above with respect to claim 1, Summerell et al. fail to disclose the generation of the multivariate expression.

However, Tanaka discloses a method and system for statistically analyzing financial databases to identify causes responsible for systematic variances. Specifically, Tanaka discloses a process of generating a multivariate statistical model from the values in the database and a scoring formula based thereon (Tanaka et al.; paragraphs [0016] [0051]). Tanaka further discloses employing the resultant multivariate expression to determine the "relative contributions" of each of the individual data elements (i.e., individual variables) (Tanaka; paragraphs [0009] [0068]-[0070]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the multivariate model development strategy disclosed by Tanaka to generate the multivariate expression employed by Summerell et al. The motivation to combine the teachings would have been to identify, quantify, and rank the data element's contribution with respect to the of the process goals (Tanaka; paragraph [0009]) of supplying new statistics for calculating health and life insurance premiums (Summerell et al.; col. 5, lines 3-15).

As per claim 9, Summerell et al. teaches a method further comprising the step of defining at least one assumption for the mean value associated with at least one of the plurality of predictive variables (Summerell et al.; col. 16, lines 16-18).

As per claim 10, Summerell et al. teaches a method wherein the step of calculating the slope further comprises the step of calculating the first derivative of the scoring formula with respect to the predictive variable of the plurality of predictive variables that is being analyzed (Summerell et al.; col. 16, lines 4-35).

As per claim 11, Summerell et al. teaches a method wherein the deviance value is calculated as follows: 7 Deviance of x i = (x i - i) i where .mu..sub.1 is the mean for x.sub.1 and .sigma..sub.1 is the standard deviation for predicitve variable x.sub.i (Summerell et al.; col. 10, lines 1-39 and col. 16, lines 13-35 *see analysis claim 6).

As per claim 12, Tanaka teaches a method further comprising the step of ranking each of the plurality of predictive variables based on the contribution of a predictive variable to the score wherein a predictive variable having a higher calculated contribution value is assumed to have had a greater effect on the score (Tanaka; paragraphs [0009] [0068]-[0070]).

Regarding claim2 9-12, the obviousness and motivation to combine as discussed with regard to claim 8 above are applicable to claims 9-12 and are herein incorporated by reference.

As per claim 13, Summerell et al. teaches a method of evaluating the contribution of each of the plurality of variables in a statistical model comprised of a scoring formula having at least one value associated with each of the plurality of variables comprising the steps of obtaining a mean value and a standard deviation value for each of the plurality of variables (Summerell et al.; col. 9, lines 62-67 and col. 10, lines 1-40), calculating a slope value for the scoring formula with respect to the composite score (Summerell et al.; col. 16, lines 4-35), calculating a deviance value based on the mean value and the standard deviation value for the scoring formula with respect to the composite score (Summerell et al.; col. 9, lines 62-67 and col. 10, lines 1-40), and

multiplying the deviance value and slope value to quantify the composite (Summerell et al.; col. 16, lines 13-35 *see analysis claim 6 *see Summerell et al. "physiological age").

However, Tanaka discloses a method and system for statistically analyzing financial databases to identify causes responsible for systematic variances. Specifically, Tanaka discloses a process of generating a multivariate statistical model from the values in the database and a scoring formula based thereon (Tanaka et al.; paragraphs [0016] [0051]). Tanaka further discloses employing the resultant multivariate expression to determine the "relative contributions" of each of the individual data elements (i.e., individual variables) (Tanaka; paragraphs [0009] [0068]-[0070]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the multivariate model development strategy disclosed by Tanaka to generate the multivariate expression employed by Summerell et al. The motivation to combine the teachings would have been to identify, quantify, and rank the data element's contribution with respect to the of the process goals (Tanaka; paragraph [0009]) of supplying new statistics for calculating health and life insurance premiums (Summerell et al.; col. 5, lines 3-15).

As per claim 14, Summerell et al. teaches a method further comprising the step of populating a storage means with the mean value and standard deviation values for each of the plurality of variables (Summerell et al.; col. 3, lines 19-41, col. 8, lines 8-19, col. 10, lines 1-16, col. 16, lines 16-35).

Regarding claim 14, the obviousness and motivation to combine as discussed with regard to claim 13 above are applicable to claim 14 and are herein incorporated by reference.

[3] Claims 3-4 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summerell et al., in view of Tanaka, and further in view of Hammond et al. (United States Patent #5,613,072).

Regarding claims 3-4 and 15-16, while Summerell et al. determines the overall health risk associated an individual as a function of an individual's calculated or estimated physiological age and further indicates that the performed calculations would be of assistance to an insuring entity when determining premiums for an insurance policy (Summerell et al.; col. 5, lines 3-13), Summerell et al. fails to specifically relate the health assessment score to a specific premium.

However, as is evidenced by Hammond et al., the translation or a rating score or risk assessment score into a premium amount of class is well-known in the art (Hele et al.; paragraphs [0077] [0097]).

Accordingly, as per claim 3, Hammond et al.teaches a system wherein the plurality of variables describe characteristics of at least one of an existing policyholder and potential policyholder and the scoring formula is used to generate a score reflective of the expected loss/premium ratio for an insurance policy (Hammond et al.; Abstract and col. 10, lines 4-37 and col. 20, lines 14-36).

As per claim 4, Hammond et al.teaches a system wherein the premium for the insurance policy is based on the score (Hammond et al.; Abstract and col. 10, lines 4-37 and col. 20, lines 14-36).

Regarding claims 3-4, the obviousness and motivation to combine as discussed with regard to claim 1 above are applicable to claim 3-4 and are herein incorporated by reference.

As per claim 15, Hammond et al.teaches a method wherein the statistical model is used to assess the profitability of an insurance policy and each of the plurality of variables is associated with at least one of the policyholder and item to be insured (Hammond et al.; Abstract and col. 10, lines 4-37 and col. 20, lines 14-36).

As per claim 16, Hammond et al.teaches a method wherein a score generated by the model determines the price for the insurance policy and the contribution is used to identify which variables had the greatest effect on the price (Hammond et al.; Abstract and col. 10, lines 4-37 and col. 20, lines 14-36).

Regarding claims 15-16, the obviousness and motivation to combine as discussed with regard to claim 13 above are applicable to claim 15-16 and are herein incorporated by reference.

As per (currently amended) claim 17, Summerell et al. teaches, in system that employs a statistical model comprised of a scoring formula having a plurality of predictive variables for generating a score that is representative of a risk associated with an insurance policyholder and for pricing a particular coverage based on the score, a method of quantifying the contribution of each of the plurality of predictive variables to the score generated by the model comprising: populating a database associated with the system with a mean value and standard deviation value for each of the plurality of predictive variables (Summerell et al.; col. 3, lines 19-41, col. 8, lines 8-19, col. 10, lines 1-16, col. 16, lines 16-35); calculating a deviance value based on the mean value and the standard deviation value for the scoring formula with respect to the composite score (Summerell et al.; col. 10, lines 1-39), and multiplying the deviance value and slope value, as determined with respect to the composite score, to determine the composite score (Summerell et al.; col. 16, lines 13-35 *see analysis claim 6).

Summerell et al. determine a composite score derived from predetermined weighting of the contributory variables. Summerell et al. fail to disclose determining of the contribution (i.e., weighting) of the individual variables.

Applicant has amended claim 17 to include the steps of generating a multivariate statistical model from a set of values associated with insurance policy risk to identify predictive variables. As per this element, Summerell et al. fail to disclose generating the multivariate expression.

However, Tanaka discloses a method and system for statistically analyzing financial databases to identify causes responsible for systematic variances. Specifically, Tanaka discloses a process of generating a multivariate statistical model from the values in the database and a scoring formula based thereon (Tanaka et al.; paragraphs [0016] [0051]). Tanaka further discloses employing the resultant multivariate expression to determine the "relative contributions" of each of the individual data elements (i.e., individual variables) (Tanaka; paragraphs [0009] [0068]-[0070]).

Applicant has further amended claim 17 to include generating a profitability scoring formula based thereon expresses as a multivariate function. As per this element, while Summerell et al. disclose employing the scoring formula to assist in the determination of insurance premiums, Summerell et al. fail to disclose an equation specifically directed to insurance profitability. Tanaka further fails to disclose a specific insurance profitability application of the multivariate expressions.

However, Hammond et al. discloses multivariate analysis of insurance related data sets directed to premium determination and expected loss associated with the insurance plan (Hammond et al.; Abstract and col. 10, lines 4-37 and col. 20, lines 14-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the multivariate model development strategy disclosed by Tanaka to generate the multivariate expression employed by Summerell et al. The motivation to combine the teachings would have been to identify, quantify, and rank the data element's contribution with respect to the of the process goals (Tanaka; paragraph [0009]) of supplying new statistics for calculating health and life insurance premiums (Summerell et al.; col. 5, lines 3-15).

The motivation to combine the additional teachings provided by Hammond et al., would have been to apply statistical model techniques to identify claim characteristics which are significant in affecting claim costs thereby reducing losses and improving the overall financial solvency of the insurance carrier (Hammond et al.; col. 2, lines 9-14 and col. 2, lines 27-30)

As per claim 18, Tanaka teaches a method further comprising the step of ranking each of the plurality of variables based on the quantified contribution as calculated for each of the plurality of predictive variables (Tanaka; paragraphs [0009] [0016] [0068]-[0070])

As per claim 19, Summerell et al. teaches a method wherein the step of calculating the slope further comprises the step of calculating the first derivative of the scoring formula with respect to the composite score (Summerell et al.; col. 8, lines 18-29 and col. 15, lines 35-55 and col. 16, lines 4-35).

As per claim 20, Summerell et al. teaches a method wherein the deviance value is calculated as follows: 8 Deviance of x i = (x i - i) i where .mu..sub.i is the mean for x.sub.1 and .sigma..sub.i is the standard deviation for predictive variable x.sub.1 (Summerell et al.; col. 10, lines 1-39 and col. 16, lines 13-35 *see analysis claim 6).

Regarding claims 18-20 the obviousness and motivation as discussed with regard to claim 17 above are applicable to claims 18-20 and are herein incorporated by reference.

Response to Arguments

[4] Applicant's arguments filed 19 October 2007 have been fully considered by the Examiner and are considered moot in view of newly added grounds of rejection.

In response, all of the limitations which Applicant disputes as missing in the applied references, including the features newly added in the 19 October 2007 amendment, have been fully addressed by the Examiner as either being fully disclosed or obvious in view of the collective teachings of Summerell et al., and newly added references Tanaka and Hammond et al., based on the logic and sound scientific reasoning of one ordinarily skilled in the art at the time of the invention, as detailed in the remarks and explanations given in the preceding sections of the present Office Action and in the prior Office Action (mailed 19 April 2007), and incorporated herein.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert D. Rines whose telephone number is 571-272-5585. The examiner can normally be reached on 8:30am - 5:00pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDR 11/6/08

C. LUKE GILLIGAN
PRIMARY EXAMINER
TECHNOLOGY CENTER 3600